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RECALL OF FULL AND TRUNCATED PASSIVE SENTENCES IN CONNECTED DISCOURSE.

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SUBJECTS OF AGES 5, 6, 8, 10, 12, AND 20 RETOLD STORIES PRESENTED IN FULL PASSIVE SENTENCES (WITH MENTION OF ACTOR) AND TRUNCATED PASSIVES (WITHOUT MENTION OF ACTOR). WHILE THERE WAS A GENERAL TENDENCY TO RETELL STORIES IN THE ACTIVE VOICE, THIS TENDENCY WAS MUCH MORE EVIDENT IN THE CASE OF FULL THAN TRUNCATED PASSIVES. IT IS PROPOSED THAT THE SIGNIFICANCE ATTRIBUTED TO ACTIVE AFFIRMATIVE DECLARATIVE SENTENCES BY EARLIER PSYCHOLINGUISTIC RESEARCH BE MODIFIED, ALLOWING FOR INFLUENCE OF SEMANTIC CONTENT UPON SELECTION OF A PARTICULAR GRAMMATICAL FORM IN ENCODING A SENTENCE. THE TENDENCY TO RETELL TRUNCATED PASSIVES WITHOUT A ALTERATION OF SYNTACTIC FORM WAS MOST STRONGLY MARKED IN OLDER SUBJECTS. IRREGULAR VERB FORMS POSE DIFFICULTIES TO YOUNG CHILDREN IN ATTEMPTING TO PRODUCE PASSIVE SENTENCES. OTHER STRIKING DIFFERENCES BETWEEN AGE GROUPS WERE NOT NOTED. (AUTHOR/AMM)

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RECALL OF FULL AND TRUNCATED PASSIVE SENTENCES
IN CONNECTED DISCOURSE

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Abstract

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Ss of ages 5, 6, 8, 10, 12, and 20 retold stories presented in
full passive sentences (with mention of actor) and truncated passives
(without mention of actor). While there was a general tendency to
retell stories in the active voice, this tendency was much more
evident in the case of full than truncated passives. It is proposed
that the significance attributed to active affirmative declarative
sentences by earlier psycholinguistic research be modified, allowing
for influence of semantic content upon selection of a particular
grammatical form in encoding a sentence. The tendency to retell
truncated passives without alteration of syntactic form was most
strongly marked in older Ss. Irregular verb forms pose difficulties
to young children in attempting to produce passive sentences. Other
striking differences between age groups were not noted.

Recall of Full and Truncated Passive Sentences
in Connected Discourse

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Early psycholinguistic research on grammar (e.g. as summarized in Miller, 1962) attributed psychological centrality to active affirmative declarative sentences ("kernels"). Although transformational grammar no longer makes the distinction between optional and obligatory transformations on which the psycholinguistic notion was originally based, there remains a body of research (summarized in Ervin-Tripp and Slobin, 1966; Lyons and Wales, 1966) by and large supporting that notion of centrality.

In regard to memory for sentences--the concern of the present study--the notion was phrased by Miller as a "variant of Woodworth's 'schema-plus-correction' method of recoding" (1962, p. 760). Miller has summarized this hypothesis in the following terms:

. . . subjects recode the input sentence into two separate parts. One part deals with the semantic information in the sentence while the other, contains "footnotes" that describe the syntactic form in which the various elements of the sentence appeared. The semantic part is the representation of the simple active declarative affirmative sentence underlying

the stimulus sentence. The idea that a complex sentence may be recoded as the simplest form of the sentence plus syntactic "footnotes", will be called the coding hypothesis (1964, p. 5).

Whether or not it is the active affirmative declarative sentence which "underlies" other sentence forms in any strict linguistic or psychological sense, it is certainly the case that the underlying meaning of a sentence can be stored in some form which is not identical with the literal shape of that sentence at input (e.g. Mehler, 1963; Sachs, 1966). As Mehler has pointed out: "Exactly how the kernel is encoded, of course, is not established; it might be an image, an abstract set of symbols, or anything else capable of regenerating the kernel sentence on demand" (1963, p. 350). The present study examines the proposition that the most accessible realization of a given sentential meaning is the active affirmative declarative form. Only the active-passive relation is considered here, as there is no firm linguistic basis to suppose a different semantic interpretation to underlie the corresponding forms.

In current linguistic formulations (e.g. Katz and Postal, 1964), a passive is not derived from its corresponding active, but from an underlying phrase-marker with a "dummy" element indicating the passive voice. The transformation which converts this underlying string to the surface structure of a passive sentence is thus obligatory and meaning-preserving. There is therefore no linguistic basis for treating passives as derivative, yet some psycholinguistic studies point in that direction. In terms of memory for sentences, for example, Mehler (1963) had SS learn mixed lists of sentences of various grammatical forms, and found passive sentences to

be more frequently recalled as active than vice versa, thus supporting the coding hypothesis. Schlesinger (in preparation) controlled for possible effects of length and unnaturalness of passive sentences in an experiment in which Israeli Ss were presented with Hebrew active and passive sentences for recall. The two sentence types are equal in length in Hebrew, and all of the stimuli were drawn from newspapers, the passives being rated by judges to be "more natural" and "more frequent" in the passive form. Nevertheless, passives were recalled as actives twice as often as actives were recalled as passives.

Sachs (1966), on the other hand, found no asymmetry in the active-passive relationship in studying recognition memory for sentences in connected discourse, with varying intervals between sentence presentation and recognition test. After a filled delay of about 27 seconds (listening to 80 additional syllables of text), Ss had difficulty noting mismatch of voice between stimulus and recognition sentence (active to passive or vice versa), although they had little difficulty in detecting a change in meaning. Changes from active to passive were no easier to recognize than changes from passive to active. Sachs concludes that: "Form which is not relevant to the meaning is normally not retained" (p. 20).

These findings are consistent with a proposal that the underlying meaning of a sentence can be realized equally well in either the active or passive voice, but that it is easier for Ss to encode sentence content in the active when faced with a recall task. This could be either because of loss of the passive "footnote" (Savin and Perchonock [1965] have shown that such a "footnote" may take up actual memory space), or because it is in some psychological sense "more difficult" to produce passive sentences, or both.

However, though the active-passive distinction may be irrelevant to meaning in the strict linguistic sense, it is undoubtedly relevant to meaning in a broader sense. It has been frequently noted that a common function of the passive is to emphasize the object of action by mentioning it at the beginning of the sentence. Segal and Martin (1966, as cited in Turner and Rommetveit, in press), for example, found that the subject of a sentence was rated as the most important element for both active and passive sentences. Turner and Rommetveit (in press) revealed the emphasis function of the passive by directing Ss' attention in remembering active and passive sentences. This was done by the means of pictures, at presentation and recall, showing the actor, object of action, or total situation referred to by the sentence. When used as retrieval prompts, pictures of actor or total situation facilitated recall of active sentences, while pictures of object of action facilitated recall of passive sentences. Active sentences tended to be recalled as passives when a picture of the object served as a recall prompt, while pictures of actor or total situation facilitated recall of passives as actives. Passives were recalled as actives more frequently than vice versa, again supporting the centrality notion discussed above.

Another important function of the passive is to allow for deletion of the underlying subject of the sentence in cases where the actor is de-emphasized (e.g. "He was given a ticket") or unknown (e.g. "Girls' ears were customarily pierced in infancy"). Such "truncated passives" probably represent the dominant use of the passive in English. Jasparsen reported, for example, that between 70 and 94 per cent of passive sentences found in a survey of various English writings contained no mention

of the active subject (1924, p. 168). In order to turn a truncated passive into an active, the deleted actor must be replaced by a generalized actor, such as "somebody" ("Somebody customarily pierced girls' ears"). It seems unlikely that the strict form of the coding hypothesis accounts for memory of such sentences--that is, it is unlikely that a truncated passive is stored in the form of an active affirmative declarative sentence, with generalized actor, plus "footnotes" indicating passive voice and deletion of underlying subject. The present study approaches this question by examining recall of full and truncated passive sentences.

METHOD

Subjects. The Ss were English-speaking children, in preschool, kindergarten, second, fourth, and sixth grades; and adults. The average ages of the groups were 5, 6, 8, 10, 12, and 20 years. There were five male and five female Ss at each age level. The five year olds attended a middle-class preschool in Berkeley, California; the remaining child Ss were pupils in a middle-class elementary school in Belmont, Massachusetts; the adult Ss were Harvard and Radcliffe Summer School students. All Ss except the preschoolers first took part in an experiment described elsewhere (Slobin, 1965).

All Ss, of all ages, showed comprehension of the passive, as evidenced by correct identification of pictures described in the passive voice; and all Ss were able spontaneously to produce passive sentences in response to questions designed to elicit such sentences. (For more detail, see Slobin, 1963).

Materials and procedure. Ss were read brief stories in the passive voice, with instruction to retell the story as accurately as possible.

Series A stories consisted of full passives (i.e. with mention of actor) and Series B stories consisted of truncated passives (i.e. without mention of actor). The A and B versions of each story were equated in terms of length and content. For example:

A Story. On the first day of school Bob was introduced to his new teacher by the principal, and was given a reading book by the teacher. He was shown around the classroom by the teacher, and all of his friends were happy to see him. When he came home he was asked by his father to tell all about school, and he said it was fun.

B Story. On the first day of school in September Bob was introduced to his new teacher, and was given an interesting reading book. He was shown around the new classroom, and all of his friends were happy to see him. When he came home he was asked to tell all about his first day back at school, and he said it was fun.

Six pairs of stories were constructed (presented in full in Slobin, 1963, pp. 81-2), designed to attract the attention and interest of children of various ages and sexes. (Adult Ss were informed that the stories had been constructed for children.) Each story had four underlying passive sentences.

Except for the preschoolers (see below), each S was told one story from Series A and another (different) story from Series B. Half of the Ss heard an A story first and half a B. Data are presented only for Ss who retold both stories. The average number of sentences per story retold at every age level was about four (i.e. total story), except for

the preschoolers, who remembered an average of 3.2 sentences per story. Consequently, some preschoolers were asked to retell more than two stories, in order to make the number of sentences recalled roughly equal to the other age groups. Ss' retellings were tape recorded and transcribed for analysis.

RESULTS AND DISCUSSION

Table 1 presents percentages of sentences retold as actives and passives by Ss in each age group, and for all Ss taken as a single group. Retold sentences are classed into four types, as exemplified by the following changes in the model sentence, "They were taken to their seats by a man": (1) corresponding active--"A man took them to their seats"; (2) other active--"A man showed them where to sit"; (3) full passive--same as model in this case; (4) truncated passive--"They were taken to their seats." (A fifth possible category, other passive, was never used.) In the case of truncated passive model sentences, e.g. "They were taken to their seats," a retold sentence was categorized as "corresponding active" if any specific actor was added, provided the retold active corresponded to the model passive in other respects (e.g. "An usher took them to their seats"). A specific actor, such as "usher," was supplied more frequently than the generalized actors "someone," "somebody," or "they." (i.e. without syntactic alteration)

Verbatim retelling/of Series A stories can be found under the heading "full passive," while verbatim retelling of Series B stories is shown under "truncated passive." Table 1 shows that truncated passives (Series B) tend to be recalled verbatim far more frequently than full passives

(Series A). On the average, 60% of truncated passives are retained in retelling, while 75% of full passives are changed to another form. Greater accuracy in retelling Series B, as opposed to Series A stories was true of almost every S of every age. Each S was given an accuracy score for A and B retellings (percentage of unaltered sentences in retelling), and, taking each S's accuracy scores on A and B stories as matched pairs, a separate comparison of accuracy in retelling stories of the two series was made for each age group. For each of the six age groups, accuracy in recall of truncated passives (Series B) was significantly better than accuracy in recall of full passives (Series A) (Wilcoxon matched-pairs signed rank test, $T = 1$ for adults, $T = 0$ for all other age groups, one-tailed $p < .005$). For every age group except the eight-year-olds there was a significantly greater tendency to retell A stories in the active rather than B (comparing percentage of active sentences in A and B retellings, Wilcoxon T for each age group except eight-year-olds is significant with one-tailed $p < .025$). These data indicate, as suggested above, that while full passives may be stored in a form which facilitates encoding in the active voice, it does not follow that all sentences are stored in such a form. Truncated passives are apparently stored in some manner which tends to facilitate retrieval of their original syntactic form without alteration. This is most probably related to the communicative function of truncated passives to avoid reference to the underlying sentence subject. Note that Ss relatively rarely supplied actors in retelling such sentences: truncated passives were almost never retold as full passives, and appeared as corresponding actives far less frequently than did full passives. (Additional evidence

of the function of the truncated passive can be found in the use of this form in retelling full passives of Series A stories, as shown in Table 1.) In such cases it is not a passive "footnote," but an element of sentence content which is most readily lost.

It would seem, then, that the coding hypothesis is in need of some revision. In the case of truncated passives, at any rate, the syntactic form is not totally irrelevant to the meaning of the sentence, and frequently tends to be retained (or to serve as a ready receptacle for the underlying semantic content of the sentence, in whatever manner such content may be retained). The semantic part of a sentence coded in memory, thus, need not always correspond to "the representation of the simple active declarative affirmative sentence underlying the stimulus sentence." The interrelation of semantic content and syntactic form in memory, as revealed here, is in consonance with findings in regard to sentence comprehension as well, such as Wason's (1965) discovery of the role of "plausible denial" in facilitating comprehension of negative utterances, and Slobin's (1963) discovery of the role of "reversibility" in facilitating comprehension of passive sentences. It is clear by now that there is no uniform relationship between "syntactic complexity" and "psychological complexity" of sentences. Slobin (1966) has demonstrated that passive sentences are not always more difficult to comprehend than actives; Sachs (1966) has shown that they are not necessarily more difficult to recognize; the present study, like that of Turner and Rommetveit (in press), indicates that they need not always / undergo "simplification" in recall. Indeed, there is no firm basis for asserting that change of a truncated passive to a corresponding active constitutes a "simplification" in any psychological sense.

Age differences in recall of passive sentences are not striking, just as major age differences in comprehension of such sentences have not been revealed after kindergarten (Slobin, 1966). If one breaks the Ss into two equal-sized age groups--five to eight and ten to adult--one finds roughly equal average accuracy in retelling of full passive sentences: 23.8% for the younger group, 26.0% for the older. There does seem, however, to be a sharp difference in recall of truncated passives, the younger group recalling 44.3% of such sentences verbatim, the older group 74.4%. Lacking data on the frequency of occurrence of these forms in children's speech, as well as the ability of children of different ages to comprehend truncated passives, these findings are amenable only to the most general explanation of increased linguistic skill with age. Hayhurst (1965) presented children of ages five, six, and nine with the task of constructing sentences to describe pictures, using grammatical forms presented by E in model sentences. Among the model sentences were passives with and without actors. Correct performance was significantly better in the latter case; i.e. production of a passive sentence in accord with the model was facilitated when reference was not made to an actor. This facilitation appeared at all three age levels, corresponding to the younger group of the present study. Hayhurst's findings thus support the present conclusions, but do not clarify the age difference in recall of truncated passives.

As pointed out by other investigators (e.g. Turner and Romatvaite, in press), the irregular past participial verb form makes production of the passive especially difficult for very young children (though it may not impair their comprehension of such forms). Children's struggles to capture uncertain verb forms in story retelling bear dramatic witness to this fact.

For example, the following attempt by an eight-year-old to recall the sentence "Her favorite was a blue-eyed doll, which she was given to hold" finally ended in an active with generalized actor: "Her favorite was a blue-eyed doll. She...she...they...no...she was let hold...no...Suzie was let...no... Her favorite was a blue-eyed doll that they let her hold."

The search for elusive verbs is even more clearly externalized in pre-schoolers; for example: "Judy and Dave were taken...taken...to the big zoo"; or, as a three-year-old put it, "They ben got goed to the zoo."

Additional research is clearly needed in order to more fully relate variables of formal complexity and semantic content with one another, and with the various forms of psycholinguistic performance in ontogenesis and adulthood.

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Table 1

Percentages of Sentences Retold as Actives and Passives
by Ss in Each Age Group (N = 10/group)

Age Group	Sentence Type					
	Active			Passive		
	Corresponding	Other	Total	Full	Truncated	Total
SERIES A (told in full passives)						
five-year-olds	31.7	29.3	61.0	26.8	12.2	39.0
six-year-olds	43.8	21.9	65.7	21.9	12.5	34.4
eight-year-olds	32.1	32.1	64.2	21.4	14.3	35.7
ten-year-olds	52.8	11.1	63.9	27.8	8.3	36.1
twelve-year-olds	43.2	13.5	56.7	27.0	16.2	43.2
adults	54.8	9.7	64.5	22.6	12.9	35.5
All <u>Ss</u>	42.9	19.5	62.4	24.9	12.7	37.6
SERIES B (told in truncated passives)						
five-year-olds	16.7	38.9	55.6	2.8	41.7	44.5
six-year-olds	21.4	25.0	46.4	0.0	53.6	53.6
eight-year-olds	20.8	41.7	62.5	0.0	37.5	37.5
ten-year-olds	6.7	13.3	20.0	0.0	80.0	80.0
twelve-year-olds	15.6	15.6	31.2	0.0	68.8	68.8
adults	7.1	14.3	21.4	3.6	75.0	78.6
All <u>Ss</u>	14.6	24.7	39.3	1.1	59.6	60.7